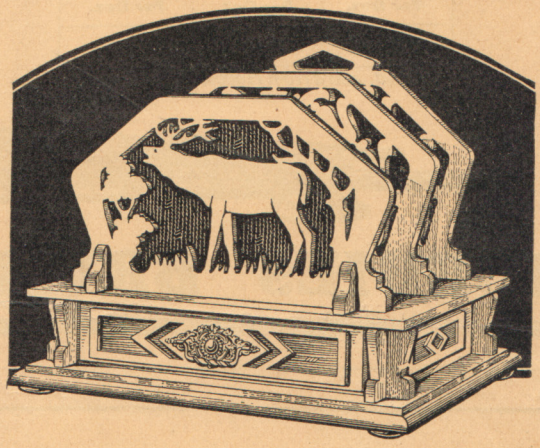
Hobbies WEEKLY

DESIGN FOR A 'TOC H' WALL PLAQUE



HANDY STATIONERY RACK AND DRAWER

LARGE DESIGN SHEET FREE

June 27th. 1936

2D

Vol. 82. No. 2123

THE FRETWORKER'S AND HOME CRAFTSMAN'S JOURNAL

From a User .....

Just one of many expressions of appreciation we receive from users of Hobbies Fretsaws. Be guided by the thousands of craftsmen the world over, who know from experience that for strength, sharpness and long life, Hobbies Fretsaws are unequalled. Remember.....Hobbies Fretsaws are the best money can buy.

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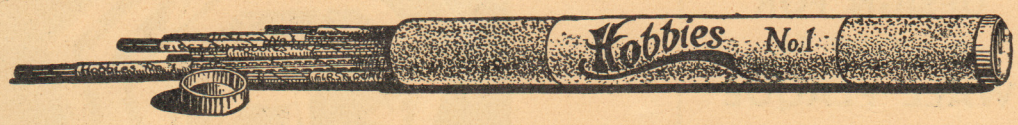
4½D.	6D.	9D.
Per Doz.	Per Doz.	Per Doz.
4/- Gross.	5/6 Gross.	8/6 Gross.

Post 1½d. extra from Hobbies Ltd., Dereham

ALL WITH ONE BLADE!

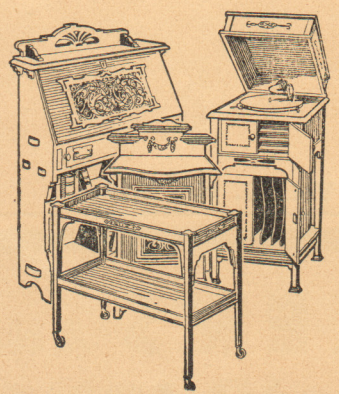
Mr. E. V. Hughes, Co. Armagh, writes:—"I have just completed the model of the Lord Mayor's Coach, a smoker's table, model altar, pipe rack, model aeroplane, letter rack and the 'Home Shrine'—all with one blade, which is still intact. I think this is a pretty good record for a beginner."



HOBBIES BRITISH FRETSAWS

For 25/-

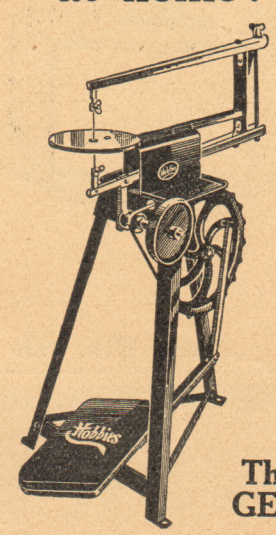
Did you ever see such a bargain? A woodwork treadle fretsaw for 25/-! Think of the things you can make and sell—of the profit such a machine will bring. There is nothing cheap or shoddy about it. It will stand up to any amount of cutting. Suitable for wood up to ½in. thick, composition, sheet metals, etc. Speedy, silent, swift. Sent carriage forward in a crate ready to use.



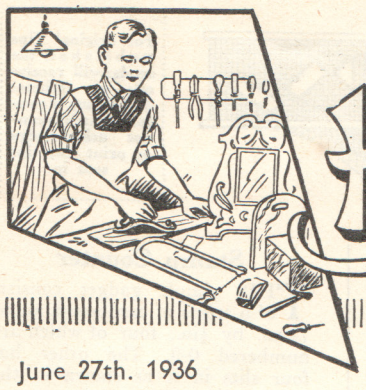
Free list of fuller details on request.

You can try one for yourself at the Hobbies Branches in London, Glasgow, Manchester, Birmingham, Leeds, Sheffield, Southampton, Brighton. Or further particulars from the makers—Hobbies Limited, Dereham, Norfolk.

A Factory at home!



The GEM



Hobbies WEEKLY

June 27th. 1936

Vol. 82. No. 2123

A NUMBER of readers send in their entries to our Photographic Competition as quite tiny prints, and so are likely to reduce their chance of winning a prize. A nice bold picture stands out so much more. I know the trouble is often the cost of getting an enlargement done, so I have got our photographic expert to tell us how to do enlarging quite cheaply and from home made accessories. You will see all about it on page 313, and I hope the results will be seen in the entries for future competitions. By the way, it is impossible for me to get the winners of the May contest into this issue, but I promise faithfully they shall appear next week.

IF you play tennis, or even if you do not, you will welcome the opportunity of making one of those Tennis Trainers where the ball is on elastic between two posts. It provides great sport, as well as excellent eye practice. Next week there will be an article how to make one quite easily.

ANOTHER excellent article which I know will be popular, is the making of a 24 inch model yacht. The trouble of some of these boats is that they are very nice to look at but—to say the least of it—not much use for actual sailing. So I have got a real expert to prepare an article describing a boat that *will* sail, as well as look good. So be sure to get next week's issue because there is sure to be a run on it.

WILL readers please put their name and address on all letters, because, strange as it may sound, I have several in my drawer now from unknown readers. Some ask definite questions, which I cannot answer because I do not know where to address them. So probably somebody is thinking badly of me and saying quite undeserved things when it is not my fault. So when you write will you make *sure* you have put your address on as well as your name.

THE first Exhibition of the members of the Napier Street Junior Institute, Hoxton, London, has been successfully held, and included besides fretwork, excellent examples of lino-cut work, leather work, cabinet making, etc. Although only started last September, there are 260 members from 14 to 18 years of age who find much enjoyment at all kinds of pastimes.

ANOTHER Exhibition held last month was that of the British Museum Literary and Art Club and exhibits ranged from a home made violin to an elaborate oil painting. George suggested it was easy because all you had to do was to take one of the ordinary exhibits (like a mummy or a stuffed elephant I suppose!) out of the cases and show that as your own effort. He would!

BY a recent post the Registrar of the Hobbies League received no less than nine test panels all beautifully cut by anxious prospective members. They came from Castle Fields, Shrewsbury where Mr. Chas. Claws has developed an enthusiastic centre. The Club recently had a successful "Visitors' Night," when friends were invited and were proposing to hold a camp at Whitsun, about which we shall no doubt hear in time. The money for this had been put aside each week for some time and for these odd three pennies regularly saved there was no doubt an excellent repayment. This is the first time I have heard of a Hobbies League Camp, but the idea may appeal to others.

Hints on camping appear from time to time in these pages.

CONTENTS

DESIGN CHARTS—

Letter Holder and 'Toc H' Plaque

Hints and Tips	298
Letter Rack and Drawer	299
Summer Crafts	300
Magnetic Dancing Dolls	301
How to make a Paper Punch	303
Swimming	305
Making a Camp Outfit	306
'Toc H' Wall Plaque	307
Railway Notes	308
Modern Cabinet and Newspaper Rack	309
Making an Enlarger	313
Rock Garden, with Pool and Fountain	315
Animal Bookends in Fretwood	317

Next Week's Design—Extending Book Rack

Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. will be found on cover iii.

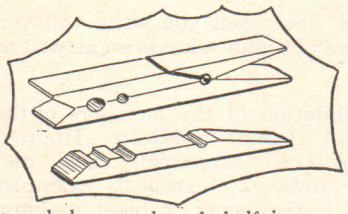
Send your own simple tips to The Editor Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

HINTS AND TIPS WORTH KNOWING

For original Tips published the sender will receive one of Hobbies Self-filling Fountain Pens: We cannot acknowledge or print any tips sent in.

Tyre Levers

VERY efficient tyre levers for bicycles can be made quite easily and quickly from a spring-clip clothes peg. Separate the



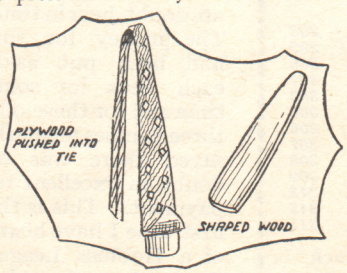
two halves, and each half is an excellent, strong, and light lever. A good plan is to carry a peg as a "spare" in your tool kit so it is at hand when you require it.

Doll's House Tip

WHEN making a doll's house in fretwood a good idea is to paper the lower part of walls of the house. The top part can be done like this. Prepare some glue and place a thin layer on the wood. Next obtain some barley or tapioca and spread it over the glue till it is all covered and gives a ragged surface and then paint it white.

Tie Tidy

WHEN a new open-end tie is bought cut a piece of thin plywood to the shape of the wide-end. Lay the tie out flat, trace the shape, cut out and slip it into the tie when it is not being worn. This will keep it as new and the tie need only be put into a press occasionally. When the



tie becomes soiled in front it can be washed and dried on the board without losing its shape. The shape of ties vary so it is as well to make a board for each one.

Jigsaw Making

AFTER having stuck the picture on the wood it will sometimes be found that the wood will warp through the glue being too thin. This can be easily remedied by damping an old newspaper and laying the warped wood the reverse way up on the damp paper until it becomes straight.

Damp Walls

IN some houses damp walls are a source of worry. To overcome this before repairing a room or cupboard, give the bare walls where dampness has appeared three coats of Waterglass, such as is used for preserving eggs. Be sure each coating is dry before another is applied. Dampness will not penetrate after this treatment.

Smoothing Glass Edges

AFTER cutting glass with a glass cutter there is often ragged edges left on which are a lot of trouble to smooth off. First get a handbowl full of water place your ragged glass underneath the water and cut with an old pair of scissors as if you were cutting paper this cleans them right off.

Wireless Testing Prod

WHILE testing a wireless set there is sometimes a difficulty in getting right in the set parts. To overcome the trouble you can easily make a small-testing prod from an old propelling pencil and a piece of wire. Obtain an old pencil and take the inside out. Solder a piece of wire on to the spring, and drill a hole in the cap. Then put the spring back and thread the wire through the hole in the cap. Put a little adhesive tape on the steel point so that only about an $\frac{1}{8}$th of an inch is bare. The wire may be fixed to a battery and the long insulated prod will enable you to get right in the set without damaging anything.

Stamp Counter

THIS simple gadget consists of 5 strips of cardboard, about 7$\frac{1}{2}$ins. by $\frac{1}{2}$in., four of which are numbered 0-9. The other has four slits in it as shown in the

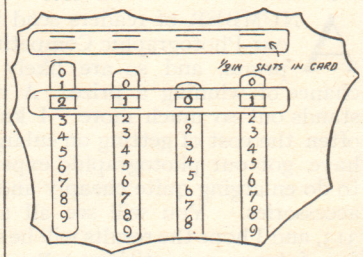


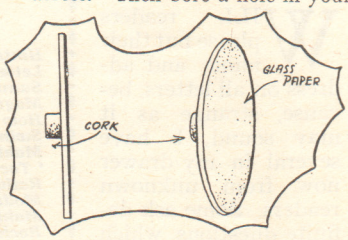
diagram. If a reader has 1,912 stamps, he simply takes a strip No. 0-9 and pushes it through the strip in the other piece of cardboard until the No. 2 is shown in the slit. He then takes the second strip and pushes it through until the No. 91 is shown in the slit. He will then take the other strips and do likewise, until he has the No. 2,101 showing in the slits. They can be easily altered as he adds to his collection.

Blown Fuses

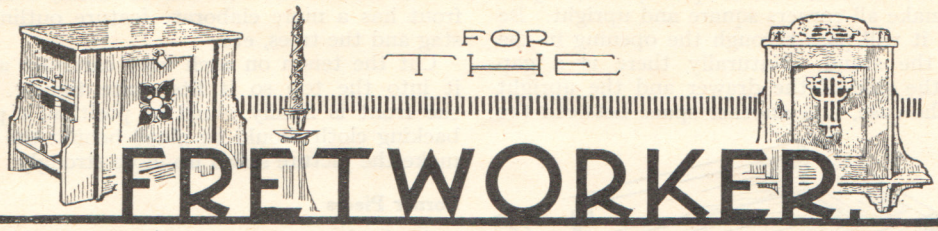
IF the fuse "blows," and you have no fuse-wire handy, insert a piece of thin tinfoil in place of the fuse-wire.

Glasspaper Disc

ALL you need is a spare piece of 3-ply and an old cork. Cut a circle of wood about 16ins. across. Then bore a hole in your



cork the size of the spindle of your machine. Glue your cork exactly in the centre of the wood and when set, glue glasspaper on the front. Then put it on to the balance wheel of your fret-machine and it is complete.



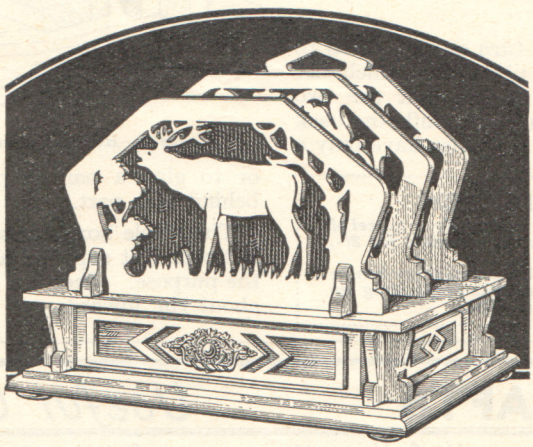
A LETTER RACK AND DRAWER

A LETTER rack is always a handy article to have about the house, and the owner of the fretsaw can make one quite easily from the design and particulars provided with this week's gift chart. Here we have full sized drawings for all the necessary parts, and each is small enough to handle, turn and operate with ease even with the smallest handframe.

As the parts are small, too, the cost of wood is proportionately low and a complete parcel of all pieces, planed and ready to cut to the shape required is supplied by Hobbies Ltd. for 2/-.

The Materials

Particulars of these and the fittings are given herewith, and there is no doubt the easiest way to go ahead is to obtain one of these parcels. You can then paste the patterns down to the respective pieces of wood, after having read these instructions, to make sure you know exactly how the whole thing is to be constructed.



The main feature of the letter holder is the stag cut-out picture in the front of three uprights. The other two of these uprights are also fretted slightly, and are set apart to form a holder into which the letters can be stood. Below this whole rack is a small drawer which measures 6¼ins. wide, and this provides quite a reasonable receptacle for stamps, pencils, sealing wax, paper clips, etc.

The work can be undertaken in almost any style of fretwood. That supplied in the parcel is whitewood with other parts for making up, and a striking and effective piece of work is the result.

The Patterns

Take the designs first, then paste them down to their respective pieces of wood, making sure the grain goes in the direction shown by the arrow on each pattern. Do not cut the parts until the paste is dry or you will tear up the paper or obliterate the cutting line by the damp sawdust which will hover round it.

The drawer portion is independent of the remaining parts, but it should be made and fitted before the top is added to ensure it will run in place properly, in the guides and runners which are formed for it.

First of all, however, you have to cut out the four pieces forming the hollow base on top of which is glued the solid base. This base is the same shape and size as the top, and in consequence both are shown together on the design chart. It must be remembered, however, that this lower piece is a solid part, and has no mortises A, B and C as is the case with the top.

A good plan is to paste the pattern down to the part which is to form the top, but only to measure off the actual size and transfer these dimensions to another piece of wood when the base is required.

Next get out the four sides, each of which is decorated by a simple overlay cut in 1/16in. wood. Two are required for the ends, but only one is required for the front, and this piece it will be noted is on the actual drawer front.

Notice, too, that the front round the drawer has an interior rectangle cut out, and the pattern shown there can be left in position when the paper is pasted down because the actual part is cut from the waste material of this front.

The front, back and two ends are halved together at F, and are then glued down to the base coming central upon it and being screwed from beneath for further strength.

The Drawer Parts

Before going further, it is advisable to cut out and construct the parts of the drawer in order to test it through the aperture in the front to make sure it fits correctly before adding the top.

A detail of the drawer is given at Fig. 1, and as can be there seen it is made of four uprights fixed together by an open tenon joint and all glued and screwed down to a floor. There is a false or outer front to the drawer which has in turn an overlay, then the fancy drawer handle.

The drawer must be made up very carefully in order to make all corners square and upright. Be sure, too, it will pass through the opening in the front of the stand. Naturally there is a gap between the side of the drawer and the upright sides of the case, and another space between the

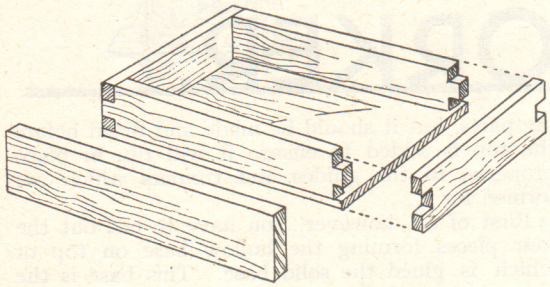


Fig. 1—Details of the Drawer

floor of the article and the floor of the drawer itself.

This space is utilised to form runners which are glued just wide enough apart to allow the drawer to slide along.

They are composed of a flat and upright piece glued and screwed together, then glued to the floor just wide enough to allow the drawer to run between. The detail at Fig. 2 shows this clearly, and the top should not be added until a satisfactory fit has been made for the drawer.

The Top

When satisfactory we can turn our attention to the top. Here we have a piece into which the three uprights are fitted. Notice that the two forward ones are only 3/16in. thick while the back piece is ¼in. The two back ones also have only a small amount of fretwork in them, whilst the front has a more elaborate feature outlining the stag and the trees, etc.

Cut the tenon on each very carefully and test it into the top so it fits quite tightly. When the front is finally glued in position, a piece of backing cloth should be glued behind the stag to make the picture stand up more strongly.

Corner Pieces

At the front, too, we have a couple of little odd support pieces which are glued into the rightangle as shown at D. They are of use as well as ornament, and some workers may even like to add similar strips between the other pieces to keep the whole thing upright. Indeed, if there is any sign of the upright pieces falling over or not having been fitted correctly, then it is an easy matter to glue in two little strut pieces between the uprights

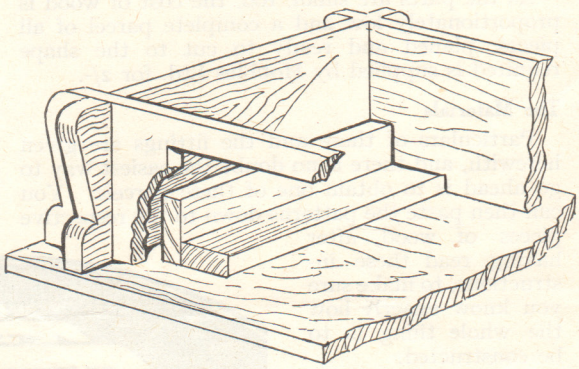


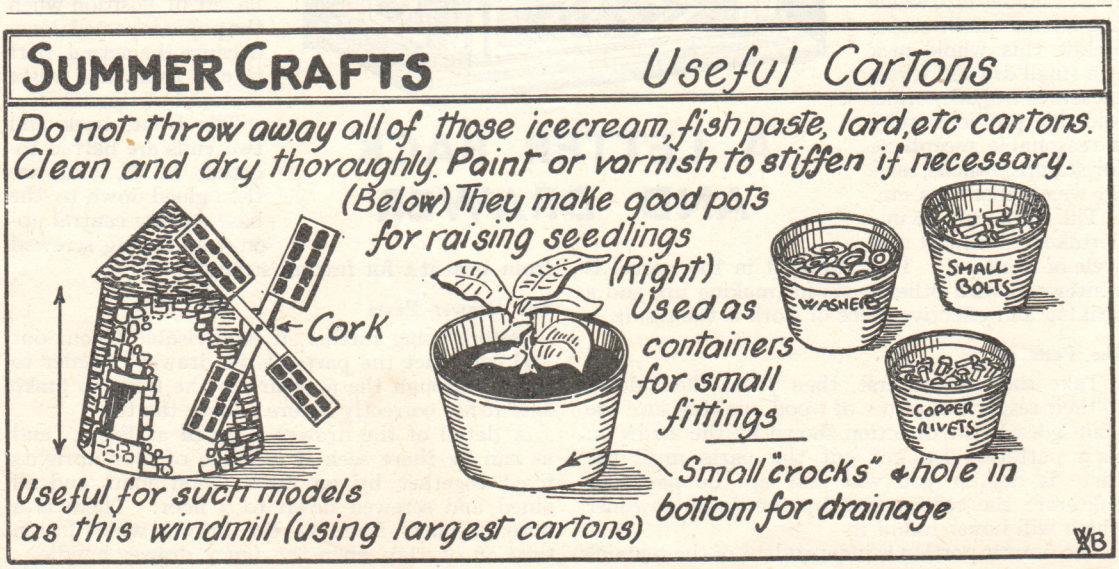
Fig. 2—How the Drawer Runners are fixed

or to glue a narrow piece of ¼in. wood along behind each part.

The whole box is raised by means of four little fretwork feet supplied already cut and shaped for the purpose. They are glued beneath each corner about ¼in. inwards.

MATERIALS REQUIRED

For making this Letter Rack we supply a parcel of selected whitewood and other wood, complete for 2/-, or post free 2/6.
The Fittings required are a handsome fancy handle (No. 5301) 2d., and piece of linen cloth for backing up the frets as explained—3d., postage 2d.


SUMMER CRAFTS
Useful Cartons
Do not throw away all of those icecream, fish paste, lard, etc cartons.
Clean and dry thoroughly. Paint or varnish to stiffen if necessary.
(Below) They make good pots for raising seedlings
(Right) Used as containers for small fittings
Cork
WASHERS
SMALL BOLTS
COPPER RIVETS
Small "crocks" + hole in bottom for drainage
Useful for such models as this windmill (using largest cartons)
WB

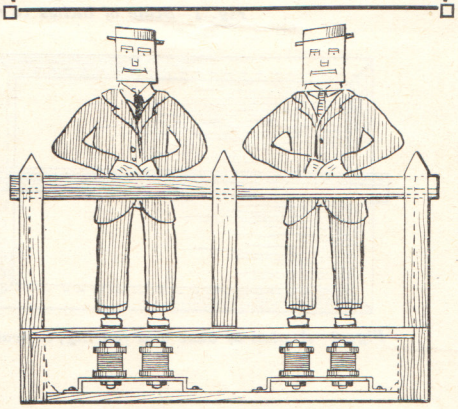
The AMATEUR ELECTRICIAN

MAGNETIC DANCING DOLLS

DANCING, or other animated dolls have been favourite toys for hundreds of years, from Punch and Judy to elaborate marionettes.

Although the two gentlemen who are demonstrating what fences really are made for, do not seem very energetic, they are able to perform a right merry step-dance. No matter how intricate the steps they never get out of step with each other.

We show two ways of working the figures. One where the little men are put in position, leaning on a tiny fence, with no apparent mechanism to cause them to move. The second system which shows a little of the motion, but perhaps is a trifle easier to make.



In either case, the first parts to make, are the bodies of the dancers, which are of any odd pieces of fretwood, about ¼in. thick. By using the scale you can make them as in Fig. 4. This size is suitable for ordinary use, but if you happen to be a drummer, a bigger model would enable you to give a novel exhibition at Scout meetings, for the taps would be sounded by the little men's feet, in strict time to your fingers.

The legs are pieces of fretwood, slotted to be able to slide up and down, although the normal position is maintained by fine coil springs or a strand of fine elastic. Each leg is fastened on by two screws, and there are two washers to each screw—one at each side of the wooden leg.

The whole success of the action depends on the smooth working of the legs, so take care to have everything cleaned up with fine glasspaper. A little graphite or stove polish will help to make the parts slide easily.

In Fig. 2 you can see that a small piece of quarter round mould is glued on each side of the leg at the ankle. The soft iron that is the foot, is drilled to take two wood screws, by which the foot is attached to the leg.

The Stage

The stage or platform, is made of instrument wood as thin as can be got, and is glued to a frame of ½in. by 1½ins. wood, to make an inverted box. Stripwood or moulding is glued on to the top edges to make a nice finish.

The top bar of the fence is a piece of grooved moulding which is supported at each end by an upright of ¼in. by ½in., with a pointed facing post of ⅛in. by ½in. on the front. The middle post is simply glued to the top bar and just clears the platform so as not to damp the sound when the feet tap the board.

The figures rest on the top rail by the hands, which fit in the grooves of the moulding, being set out from the body by smaller pieces of wood, as in Fig. 2.

Underneath the box is a hinged bottom, which can be held closed by a ball catch.

The electro magnets are fixed to this board in a position directly under each foot.

The Magnets

Four magnets are needed. They may be old bell magnets, or the small coils supplied in Trix outfits. An extra powerful movement is obtained by using eight coils in the form of four double magnets, the bottom ends of each pair being joined by an iron strip.

In Figs. 1 and 2, four single coils are shown, mounted so the poles, at the top, just clear the underside of the platform. Wood can be used for the purpose, but brass strips are shown in the drawing. Take particular note, that while they are mounted in pairs for convenience, each one is an independent magnet. Therefore they must not be bridged by iron or steel.

Now if any one of the magnets be supplied with current it will pull down the iron foot directly above it, and so give a sharp tap on the wood.

The Tapping Keys

In wiring the magnets, one wire from the battery goes to one end of each coil as shown by the heavy dotted line (A) in Fig. 5. The other ends of the coils are joined in couples; wire B controls both right feet, and wire C both left feet.

The metal strips forming the switches or tapping keys may be mounted on a wood block or on the

lid of a box holding a flashlamp battery. The three wires C, B and A or A I, can be any reasonable length, so the control can be worked by another person in the next room.

Careful adjustment of the little tension springs is needed. You might start with the feet about $\frac{1}{4}$in. above the platform, but remember that a slight increase in distance means a big drop in the tractive power of a magnet.

MATERIALS REQUIRED

About three feet each, of Stripwood: $\frac{3}{8}$in. by 1$\frac{1}{2}$in., $\frac{1}{2}$in. by $\frac{1}{2}$in., $\frac{1}{4}$in. by $\frac{1}{2}$in.
One foot of No. 36 grooved moulding.
A square foot of 1/16in. instrument fretwood.
Four pieces of iron, $\frac{1}{4}$in. square and 1in. long.
Either four or eight electro magnets, "Trix" or four bell movements at 6d. each.
Strip metal, or Trix parts, for the tapping keys.
Battery, liquid glue, nails.

It will produce a better effect to give a smart pull over a short distance than a slower, longer movement. By a little extra work, the sliding legs can be covered in by a duplicate body on small wood spacers, with the spaces round the edge covered with glued-on tape or paper.

Now, the two dolls can be shown round, and then simply placed on the railing, with nothing to show how they are made to dance. Yet every time the key R is pressed, down comes the right foot of both figures, and so with the left.

Fig. 6 needs little explanation. The figures are fixed to the top rail, and the moving feet are quite apart from the bodies save for tiny cloth trousers.

The movements are old electric bells—or you can get new movements for 6d. each.

We show the general arrangement, but the details will depend on the type of bell you get. The bell hammer is removed and an extension piece of strip iron is attached, to magnify the movement. In this case, the top of the box is put on last, as there must be slots in the board to let the strip iron come through. The feet are made of wood, screwed to the strip iron, or of plastic wood moulded round.

The trembler part of the bell is best removed and the wires taken direct to the coils.

The finish is optional, but one of the small outfits of coloured enamels sold by Hobbies will help you to make a really attractive novelty.

Bear in mind that these models *have* been made, and with only moderate care they will work satisfactorily, so if you have any trouble, write to the Editor, and you can have further help.

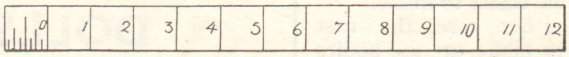


Fig. 1—Scale of inches to work out the drawings

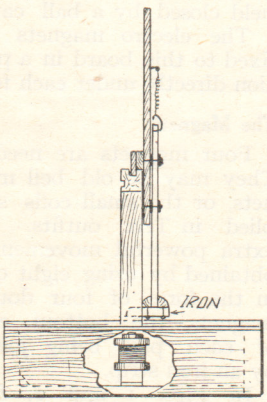


Fig. 2—A side view

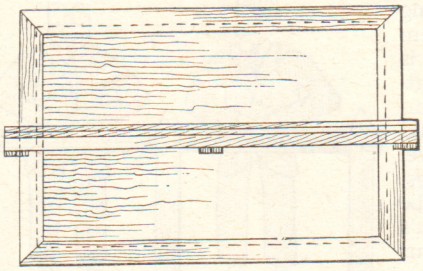


Fig. 3—A plan of base and fencing, to scale

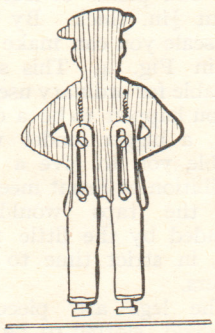


Fig. 4—The shape of the dancing figures

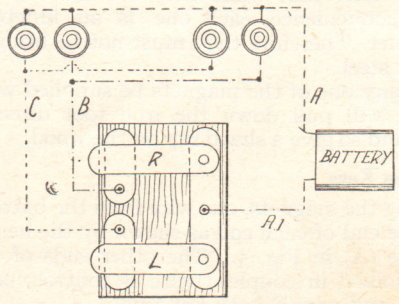


Fig. 5—Details of the Wiring

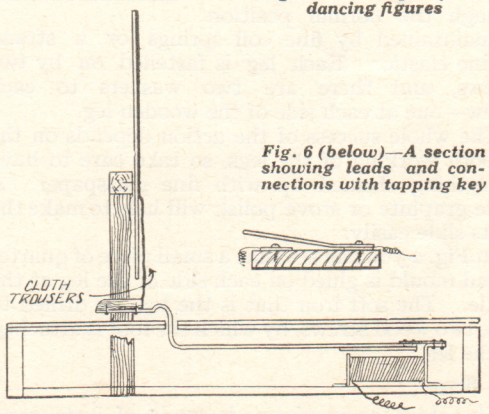
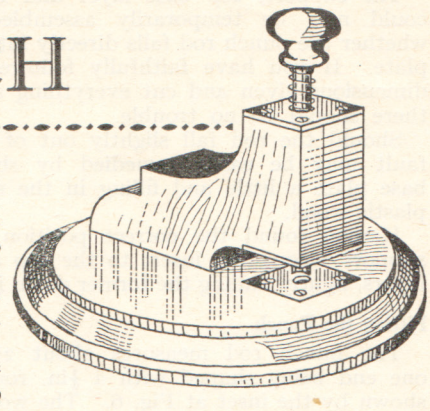


Fig. 6 (below)—A section showing leads and connections with tapping key

HOW TO MAKE A PAPER PUNCH



IF you preside over a Hobbies League Club or like to keep notes and bills tidy, the simple device shown herewith will be found invaluable when filing bills, receipts, general notes, etc. If, too, you make your own parcel tags, it is ideal at punching out the twine holes.

It does it neatly and evenly, the waste being collected in a special compartment inside the base. This saves the tiny "pips" being scattered all over the place, for when full, it is just a matter of taking the whole thing over to the waste-paper basket, twisting the circular bottom cover until the outlet hole is directly opposite the compartment and shaking all out.

Construction of Punch Support

With the wood shown needed at hand, commence work by making the punch support. This is built up from three separate pieces of ¼in. fretwood, the shape and size being given at Fig. 1.

When cutting out with the fretsaw, be sure to have each piece truly duplicated, as any inaccuracies will cause trouble at the tenon and the ¼in. sq. channel.

The latter has been indicated by dotted lines,

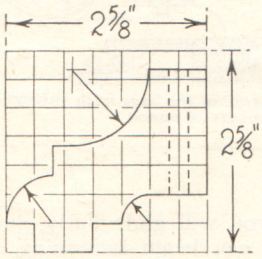


Fig. 1—Shape of supports in 3/8in. squares

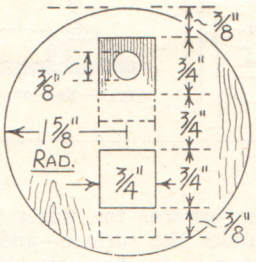


Fig. 2—The top base layer

and must be cut in the central portion only. This is clearly seen by the constructional detail at Fig. 5, the pieces being glued and (if necessary) nailed together as neatly as possible.

The Base Layers

The base, it will be observed, is built up from three separate pieces of wood, too. The top layer (Fig. 2) is cut to shape from ⅛in. plywood, this having a ¾in. sq. mortise made at one end and a ⅜in. hole cut *through* at the other. To accommodate the ¾in. sq. brass plate, a top ply is removed, first scribing the surface with a sharp pen-knife, then carefully prising the ply away.

The central base layer (Fig. 3) is cut from ¼in. fretwood, this also having a ¾in. sq. mortise to correspond with the top layer. The ⅝in. wide half circular shape must be cut right out, this being the paper waste aperture. The outside edges should be rounded with glass-paper to the dotted lines (see section at Fig. 6).

In respect to the bottom layer (Fig. 4), only half is shown, the other half being identical, of course. This is cut in one complete circle from ⅛in. plywood, the inner outlet piece being removed in one solid. Do so, by drilling a tiny hole on the diameter line (marked by an X), then insert the saw blade and cut around to this point again. A ⅝in. finger hole outlet is cut in the latter as shown.

Assembling the Parts

Fig. 6 shows how the bottom layer is screwed to the centre portion. Four ¼in. by 3 flat head iron screws should suffice, a longer screw holding the circular outlet piece so it may be easily revolved with the fingers.

Before going any further, obtain three pieces of ¾in. sq. thin sheet brass and carefully drill a 3/16in. or ⅛in. hole in their centres. These holes should be made to suit the thickness of the punch rod, which can be either made from brass or mild steel, although the latter retains its keenness longer. The rod must fit the plate holes so it can just shift up and down—but no more.

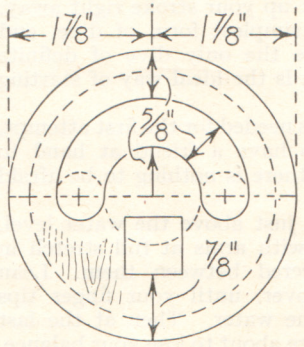


Fig. 3—Size of centre base

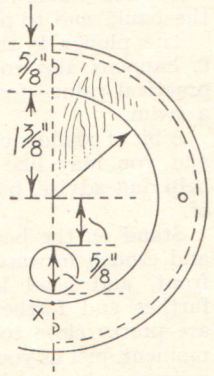


Fig. 4—The bottom base layer

If made to "wriggle" from side to side, this will result in it not falling directly into the base plate and thus interfere with the "cutting" precision so desirable.

Having prepared the plates as shown by the inset, one is screwed to the support top, a suitable recess being cut under the punch channel

so the second plate will fit flush (see Fig. 6).

The support, top base layer and base plate, could now be temporarily assembled to test whether the punch rod falls directly into the base plate. If you have faithfully followed out the dimensions given and cut everything accurately, there should be no trouble.

Should the rod fall slightly out of true, this fault may be easily remedied by shifting the base plate a little and filling in the space with plastic wood.

Having found the correct position, glue the support tenon, and insert to the top and centre layers, lightly nailing the former down if essential.

Fitting the Punch

The punch rod measures about 2¾ins. long, one end being shaped with a ¼in. round file as shown by the inset at Fig. 6. The wooden knob (No. 16) supplied, has its spindle removed and a suitable hole bored in the centre to ⅜in. deep or so.

Before gluing the opposite end of the rod into same, unscrew the support top plate, then with the pincers, make small "nicks" on the rod about 1in. from the top. Insert the rod in the channel and replace the top plate. The nicks are to prevent the steel spring from lifting the rod right out of the bottom support plate.

The top projection of the rod must be roughly filed so the glue will get a good grip with the knob.

Completing the Work

In regard to the spring, this should be made from fairly stiff steel wire such as used in clockwork toys. A suitable piece is wound tightly and closely around the rod to about 5/16in. deep. It is then stretched, and the knob glued firmly on top.

As the spring is inclined to force the knob off, place a piece of thick cardboard underneath the punch cutting end, then tie down the knob with tape, having this bound over and around the support only.

When the glue has set, complete the work by giving it one or two coats of polish or varnish. A piece of green baize or felt should be glued under the base to prevent it scratching polished surfaces.

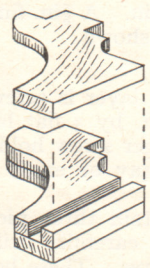


Fig. 5—The support assembly

MATERIALS SUPPLIED

1 piece mahogany fretwood—9ins. by 6ins. by ¼in. thick.
1 piece mahogany plywood—8ins by 5ins. by ⅛in. thick.
1 turned wooden knob—No. 16.
1 piece sheet brass—3ins. by 3ins. by 1/16in. thick.
1 piece solid rod (brass or mild steel) 3ins. by 3/16in.
1 doz. ¼in. by 3 brass flat head fretwork screws.
½ doz. ⅜in. by 3 brass flat head fretwork screws (for base plate only).
1 piece green baize—6ins square.

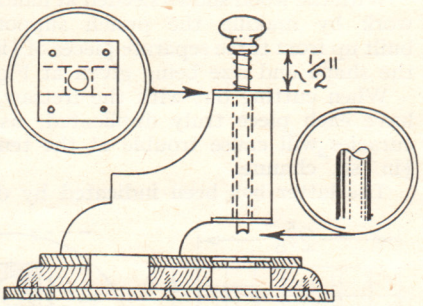


Fig. 6—Section detail of the base with enlargements of punch

Swimming—(*continued from facing page*)

which will enable you to make a stylish entry from the bank, and to pick up your stroke right away.

The plunge is the simplest form of dive, and it happens also to be the only dive of definite practical value—for it is the ideal way of starting a swim.

A bit of confidence is needed for the first attempt, and you may like to have a friend at hand to help and advise, but there is nothing to be afraid of.

Stand on the bank just above the water level, and crouch forward, with arms at full stretch in front, and head lowered between them. Lean farther and farther over, until your finger tips are pretty close to the water. Then at the last moment, just as you are about to lose your balance, raise one leg straight up behind—and topple in.

The raising of the leg will ensure that you go in head-first, instead of flat. Persevere with this tumbling method for a little while, gradually trying to get more push from the foot that stays last on the edge.

Then keep both feet down, and push vigorously from them both, taking care to keep the head well down. If the body is straightened as you go towards the water you will glide flatly, just under the surface—and can begin swimming as soon as the head rises clear. Now for the plunge.

Stand with feet a few inches apart, and toes lapped over the edge of the bank. Crouch forward, with bent knees, and arms at full stretch *behind* you, thumbs down. Keep the head up, so that you look straight ahead, not down at the water. Poise yourself on the balls of the feet, and suddenly fling the arms to the front, keeping them straight, and bringing them into a diving position, parallel with each other, palms flat and facing downward, thumbs touching.

The impetus of this arm swing will carry you forward, and at the same time you straighten the legs with fullest vigour, and leap outwards. As soon as you are at full stretch in the air the head is dropped between the arms, and this brings you over to the flat angle for a clean head-first entry. Allow yourself to glide several yards beneath the surface, just submerged, before you come to the top and take up your stroke.

Remember to keep straight, with legs together and feet pointed. There must be no slackness of muscles or limbs once you have left the bank.

NOW you must get used to deep water. Perhaps you have already ventured out of your depth, swimming breast-crawl; if not you must begin.

Naturally it is something of an ordeal when first you realize that even if you want to put your feet down on the bottom you cannot, and just because you cannot you may feel that you badly want to. But once conquer that absurd sort of nervousness and you will have no further trouble. Assuming however that you do have these normal preliminary qualms you should prepare with some care for your first adventure in the "deep."

Slide in

Do not start by jumping in, but slide off gently from some steps, with your shoulders already submerged, so you get smoothly into your swimming stroke straight away. Always swim from deep to shallow in this your first adventure, never from shallow to deep.

Or if you must be in deep water all through make your goal some convenient step or rail where you can at once rest if you are tired.

The ideal way of beginning is to have an experienced friend swimming at your side, though not so near that your own movements are hampered. If this is not possible have someone on the bank keeping close watch on you, to give confidence, and swim near to the side of the pool.

Make your first deep water swim when you are fresh—at the beginning rather than the end of a bathe. Do not start when the water is choppy from other bathers; wait your opportunity, and start when you have prospect of a smooth surface with no people meeting you.

But you can never be quite at home in the deep end of the pool until you can tread water, and as soon as you have swum out of your depth a few times you must master this business of "standing still" without having your feet on the bottom.

Treading Water

Treading water allows you to chat with a friend; rest from swimming; look around you; turn with almost no effort. It is performed instinctively a dozen times in the course of a single bathe by an experienced swimmer.

The common form of treading water is extremely easy. You have merely to drop your body when you are swimming, until you are vertical in water, and then to work the legs exactly as if you were running up stairs.

Each leg in turn draws up in front of you, the knee bending, and then drives down, so that the sole presses downward on the water—and this square pressure suffices to keep the head above the surface. One leg, of course, is recovering upwards while its fellow is driving down.

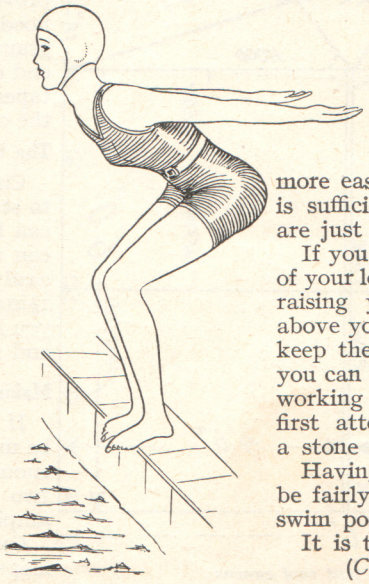
Make this leg action fairly fast, giving your attention chiefly to the down thrust of the foot. The upward recovery can be more gentle.

The arms can assist in supporting you. Bend them across in front of the chest, keeping the palms flat and facing downward, and the thumbs fairly near to the ribs. Retaining this position, perform a to-and-fro sculling action, making the hands press downward as they drive away from the chest and back again. Keep the elbows horizontal all the time.

Breast-Stroke Kick

Later, when you have learned breast-stroke, you will be able to use the breast-stroke kick, vertically, combined with this same arm paddling, and so achieve an even simpler and stronger method of treading water. But this improved method would not seem simple if you tried it at your present stage of progress.

Continue with the "running upstairs" movement, aided by the arms, until you can stay steadily out of your depth, and in the same spot, for say half-a-minute.



Keep Your Head

Do not be concerned about keeping your head very high out of the water—that merely uses up a lot of energy to no purpose. The more of your body there is immersed the more easily will you float—so that it is sufficient if your mouth and nose are just clear of the surface.

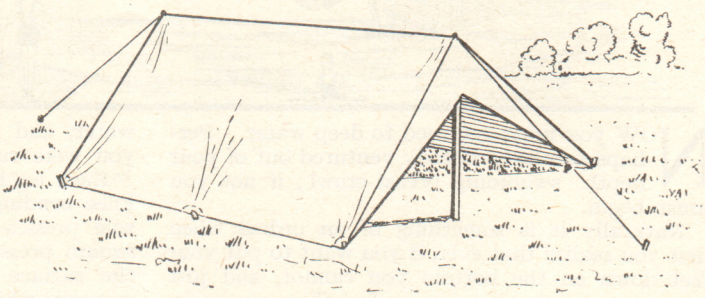
If you really want to test the power of your leg action in treading water try raising your arms high into the air, above your head. If you manage to keep the head above the surface then you can be satisfied that your legs are working pretty efficiently. At your first attempt you may go down like a stone as soon as the arms rise.

Having got thus far you will now be fairly at home in any part of the swim pool.

It is time you learned the *plunge*,

(*Continued on facing page*)

MAKING A CAMP OUTFIT



THOSE who wish to be economical can make their own camp gear at little expenditure and trouble. The larger types of tents, of course, are better purchased ; but for the hiker and cyclist or the camper who goes for " one night only " a small shelter is all that one needs, and this is not difficult to make.

The materials generally used for tent making are Japine ; Lawn ; and " Willesden " green canvas—material that has been treated with the " Willesden " process. Another good material, is Government balloon fabric, which the reader is advised to get ; it is obtainable at most of the big stores dealing in camp gear. It is fairly cheap and suitable for bivouacs and shelters.

Full Size Patterns

Before starting to make your tent it is advisable to cut out a scale model from brown paper, and work to it. This prevents you from wasting material when cutting out. Having got the idea, it is a simple matter to carry on with the material.

All seams and edges should be strengthened with tape, and in the hike tent of the " A " pattern, tape the top ridge also. All corners, and the places where peg rings are to be attached should be strengthened by circular patches of canvas. Otherwise a very strong gust of wind may tear off the rings.

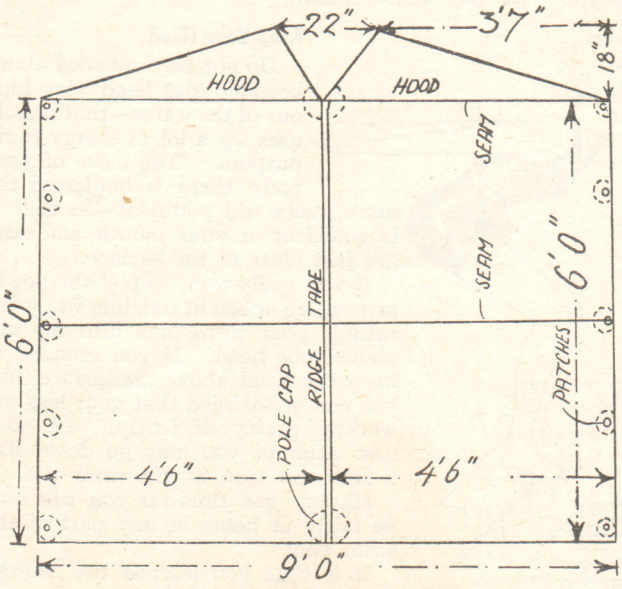
Requirements for a small tent include canvas or balloon fabric, two or three knots of strong tape, a dozen or so small brass rings, 2 bamboo poles about 4 feet high, and 6 yards of blind cord for the guys.

Get two lengths of canvas about 9ft. 2ins. in length, and 3ft. wide, join them together along their edges, with hems 1in. wide along the raw edges at the ends. This will give you a full sheet 9ft. by 6ft. Across the width of the sheet half-way along the length, sew a stout tape to form the ridge. Sew tapes along the hems.

Peg Ring Points

Then sew on patches where the peg rings are to be affixed—circular pieces of canvas about 3ins. diameter will do—and attach the brass rings. Make an eyelet at each end of the ridge tape to form the pole caps. All patches, by the way, should be sewn on the inside of the canvas.

Having done this you will see that you have a simple shelter with open ends, when it is raised on the poles and pegged down to the ground. If you desire doors, get an extra piece of canvas and cut them out to fit the ends, allowing a 3in. lap over. Sew short lengths of tape on the sides to fasten the doors at night Further to improve such a small tent make a porch or hood, out of two pieces of canvas (see diagram herewith). This is attached to the front end of tent, and joined to form a peak, sewing tapes along the joint at the peak and along the outer edges of the hood.



Dimensions of the tent roof canvas

The Guys

Cut lengths of the blind cord for the guys, to stay the poles when tent is erected. Pegs can be made out of pieces of wood, or you can use iron skewers. Slides for guys are easily made out of pieces of wood about 1¼ins. long by ¾in. thick. When completed you have a tent about 6ft. long by 4ft. high and 4ft. wide when erected.

Making a Fly-Sheet

If it is desired to have a fly-sheet, this can be made out of a sheet of canvas that is large enough to extend well over the tent, about two feet from the sides, thus providing ample shelter from wind and rain.

Gussets should be sewn on with the tape loops between them and the fly-sheet and

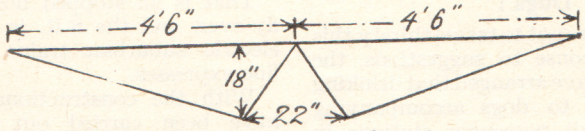
must be well sewn down. Now sew a stout tape along the ridge and make an eyelet at each end of ridge for the poles. Sew all round the raw edges of the sheet a ½in. tape. Blind cord is used for the guys.

Tent poles can be made from lengths of bamboo or from any suitable wood ¾in. or ⅞in. diameter. Or you can buy them. Steel tube tent poles on the telescopic principle are now obtainable, but are rather expensive.

You can easily make a canvas bucket out of thin duck or similar material. Strengthen all the edges and the tops with tape. The handle of the bucket can be made out of a short length of rope, or a folded strip of canvas will do.

A dipper for catching up water can be made out of a piece of birch bark about 7in. by 9in. Trim and fold into the required cup-like shape, and cut a stick about 12ins. long for the handle with a prong at one end by which to hand it up—fix and lash bark cup in cleft at other end of stick.

A wooden cross-bar, raised on two forked uprights will serve for holding mugs, the cross-stick being thrust through the mug-handles. Holders for carrying hot plates can be made from pieces of newspaper thickly folded.



A hood for the front of the tent

A TOC H WALL PLAQUE

DURING this month there is being held in London the great 21st Birthday Festival of Toc H, that great organisation of sacrifice and service which grew from the comradeship of the Great War instituted at Poperinghe largely as the outcome of its energetic and worthy founder padre the Revd. (Tubby) T. B. Clayton.

The excellence and activity of Toc H is seen in most districts in the country, and members from most units will be there at this coming-of-age activity.

This week will witness an impressive ceremony at the Crystal Palace on Saturday, when His Highness, The Duke of Kent, is lighting the lamps of the new branches made during the year. These lamps form an integral symbol of Toc H, and the Ceremony of Light is performed in solemn and dignified manner at their meetings.

Typical Features

These three features can be excellently worked into a suitable little wall ornament by means of the patterns which are given full size on page 319. There are three simple design parts, each of which should be cut out in wood with the fretsaw. Almost any kind of fancy fretwood is suitable, but oak, of course, looks most dignified particularly if stained down to make the grain stand out.

The whole of the background is cut from either 3/16in. or ¼in. wood, then a little shelf glued upon it to form a base for the lamp itself. This shelf is cut from 3/16in. wood, but the overlays of the lamp and the word "Light" should be in ⅛in. material.

Cut in Metal

A more striking effect can be obtained if the two overlays—the lamp and the wording—were cut out from metal, brass, silver, zinc or even some composition which would make them stand out in strong relief from the background.

If cut in wood they can be painted afterwards either black, brown or golden. Indeed, an artistic effect can be obtained by cutting the word "Light" out in gold, then painting the lamp up in its proper shades by means of enamel or water colour paints.

The shelf, it will be noted, is glued on edge to project from the background, and the lamp is stood upon it. The position is indicated by the dotted lines, and it will be seen it is slightly out of central in order to provide the greatest amount of strength when glued to the back.

The Printed Panel

Below the shelf is a panel provided for the wording which forms the Ceremony. It is suggested that another piece of ⅛in. wood 1⅞ins. wide and 3¼ins. long is glued ⅛in. below the shelf to serve as a raised panel. On this can be pasted the printed words which are provided, the correct size. The paper can be cut and pasted on, and an edging of paint put round.

Any painting or colouring should, of course, be done before this paper is pasted on, and the background should be finished before the overlays are glued on it.

The completed plaque is hung by means of the circular hole which is cut out in the top.

Lucky Dogs !

OUR canine friends are not to travel thirsty this summer. In response to suggestions, the British Railways have arranged that drinking water shall be supplied to dogs accompanying travellers by train at all passenger stations in Great Britain and Northern Ireland on request. There is to be no charge for this.

A Matter of Sparks

WITH a courageous disregard for topicality—unless there is some happy connection between ice-creams and snow—we this month present a picture taken in mid-winter in the U.S.A. And is it puzzling ! What are those ugly chimney pots doing, sticking out of the snow ?

Well, if you'll please believe us, they are the funnels of four ancient steam locomotives, with a massive iron snow-plough attached to the buffer beams of the front engine. A modern rotary snow-plough would cut through that drift in a twinkling. But it took four engines for the job sixty years ago !

Imperfect combustion in the firebox, together with the use of wood fuel in certain parts of the world, at one time created a playful array of sparks and cinders from engine chimneys which threatened to set neighbouring forests on fire. So the chimneys were capped with elaborate spark arresters, widening out into a great bowl with wire mesh across the top.

Wonders of the S.R.

THE opening of the new Wimbledon "fly-over" last month gave the Southern Railway a welcome burst of publicity—welcome, because this railway has been out of the news for an unconscionably long time.

The " fly-over " is in the nature of a concrete viaduct, which carries an important " up " local line right over the top of three main lines, giving it direct access to local platforms Nos. 1, 2 and 3 at Waterloo terminus. Previously, " up " local trains had to cross all the main lines on the level, thus impeding the expeditious handling of traffic and complicating the control of signals and points.

That is all stopped now by the new £500,000 fly-over, and the S.R. is able to announce extra electric suburban trains and accelerated main line expresses.

With the constructional improvements which have been carried out at Waterloo's famous bottle-neck approach at Vauxhall, together with the installation of colour light signalling, it is now possible for trains to follow one another every two minutes, instead of every four as in the past.

It is a strange thing that the S.R., the smallest railway of the " big four," has no less than seven terminal stations in London—only one less than the total belonging to the other three railways put together. Waterloo terminus, with its twenty-one platforms, covering an area of twenty-four and a half acres, is Britain's largest passenger station. The Southern boasts a total of ninety-one platforms at its London terminals.

But the most startling truth of all about the " sunshine line " is that it owns the largest suburban electrified system operated by one company in the surrounds of any one city in the world. So intensely busy is the surburban traffic that it is calculated that one electric Southern train is brought into London every fifteen seconds throughout the day !

A Compromise

THE relative merits of end-to-end and circular lay-outs are a vexed question in the model railway world. Circles are considered an abomination by some, as they are not true to life. These people forget that model railways are intended to entertain, not merely to imitate.

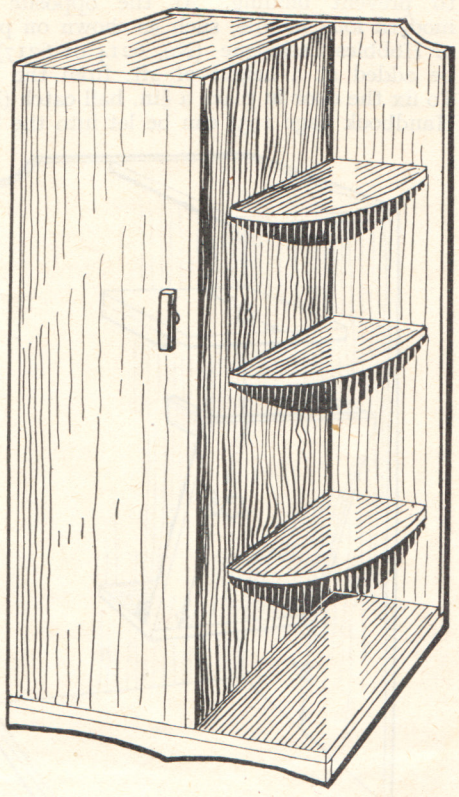
A practical compromise between the two schools of thought is a track which winds once and a half times round the room, curling inside itself, with a terminus at each end.

A short spur, springing from two points situated not far outside each terminus, can be made to link up the earlier and later portions of the lay-out where they run parallel. This will enable end-to-end as well as circular running to be carried out, while the " unreal " appearance of the spur can be concealed by skilfully arranged scenery.

Four engines to push a snow plough

High Pressure

MODERN CORNER CABINET AND NEWSPAPER RACK



THE drawing is of a useful and practical piece of small furniture which the handyman carpenter can easily make to fit a small recess in the living room, an odd corner in the hall or even as a bedside cabinet.

It stands 3ft. 1⅝ins. high, 18ins. wide and is 11½ins. from back to front, overall dimensions. It is fitted with three shelves and a cabinet compartment which contains a sloping rack for newspapers and an upper rack for books and magazines. It follows the modern plain lines and beyond a few carpentry tools the only other requirement is the fretsaw or bow saw to cut the arc of the shelves and the slightly ornamented base which raises the whole thing above the floor.

Polished Plywood

The wood throughout is ½in. plywood and the completed article can be stained down to an oak or walnut shade, then given a coat of brush polish as necessary. The edges of the plywood will not show if given an extra coat of stain to darken down the various layers.

The whole cabinet is built up on the back and as butt joints are used throughout care must be taken to get the edges true. It is advisable to purchase the wood from Hobbies because then the parts are cut to size with a saw which ensures a straight true edge.

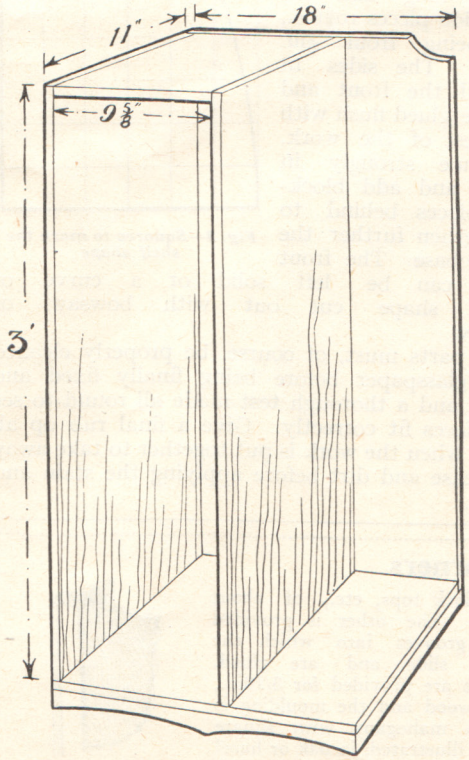


Fig. 1—Details of the general construction

The back is a complete piece 3ft. high and 18ins. wide, and the top righthand corner can be cut away to a 3in. diameter concave curve if desired. It can, of course, be left plain, but the cut-away corner has the effect of reducing any apparent heaviness in style.

The Cupboard

The cabinet portion can be cut out and built on next. It consists of the base, two sides, top and door.

The base piece extends the full width (18ins.) but only 11ins. wide. The two sides are 3ft. long and 11ins. wide, whilst the top is 9⅝ins. long and the same width. Glue and screw the base at the bottom on the front of the back, and the top flush with the top edge of the back, between the sides as can be seen at Fig. 1.

The Door

Get all these pieces squared up and in place, gluing and screwing from the back and underbase. Then measure up the aperture for the plain rectangular door which should be 2ft. 11ins. long and 9⅝ins. wide.

The door is hinged on the left, the flanges being let into the side and to the edge of the door

to prevent binding. At the opposite side a modern long handle, such as shown on page 188 of Hobbies Catalogue (No. 6214 or 6217) should be added at a height of 2ft. from the bottom. To fix the door in place a ⅜in. ball catch (Hobbies Handbook page 195) can be let into the top and

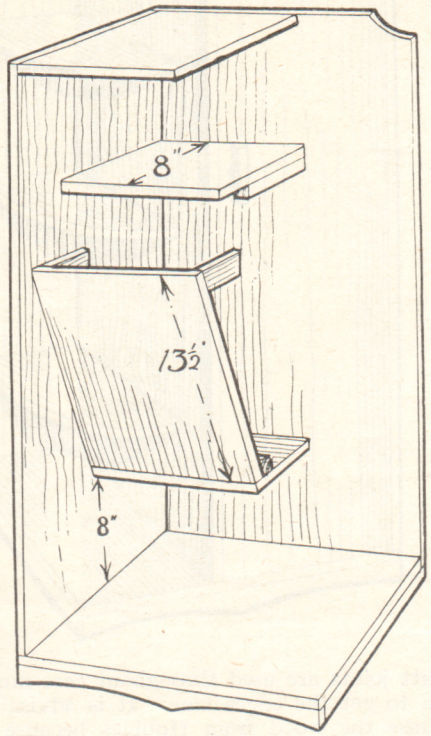


Fig. 2—With side removed to show inside shelf and rack

bottom edge of the door and into the bottom and top of the cabinet.

The interior of the cabinet is fitted with a sloping front rack and an upper shelf, although, of course, the former is optional and two or more flat shelves can be added.

Interior Fitting

For the rack and single shelf the fitting is shown as in Fig. 2, which is a broken view to show construction. The shelf is 9⅝ins. wide and 8ins. long, and should be tested to the interior to fit tightly in place and to lodge on two ½in. by ½in. strips glued and screwed to the sides for support.

The sloping rack front is a piece of ¼in. plywood measuring 9⅝ins. by 13½ins. Its bottom edge is chamfered so it may stand on a shelf bottom. This shelf is 9⅝ins. long and 4ins. wide, glued and screwed to the back and sides 8ins. upwards from the floor.

The outside shelves can vary in number according to taste but the three shown make an excellent finish and provide ample accommodation for odds and ends. Each is 6ins. wide and 9ins. long, the longer edge being placed against the side of the cabinet.

The Shelf Shapes

The top one is fixed 7¾ins. from the top, the second one is 8ins. below that and the bottom one 9ins. under that. A nice curve is marked off from the 1in. squares shown in Fig. 3 and this can be cut by the fretsaw. Or, of course, the edges can be left square if preferred, but even in that case the projecting corner should be slightly rounded.

All the shelves are glued to back and side of the cabinet, and for this reason the screwholes should be made and the screws tested in place before the sloping rack front is finally fitted on.

The fancy base shown in the picture can be added as a separate piece now, or even omitted if preferred. It is cut from 1⅝ins. or 1¾ins. steps and raises the completed piece of work proportionately higher.

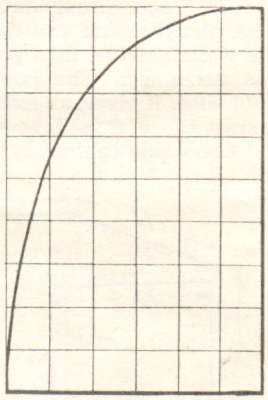


Fig. 3—Squares to mark the shelf shape

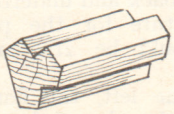
The front strip is 18ins. long and the two side pieces 10¾ins., all being from ½in. wood. The sides fit behind the front and all are glued flush with the rest of the work.

Glue strongly in place and add blocking pieces behind to strengthen further the whole base. The front strip can be left solid or a curve or fancy shape cut out with bowsaw, or fretsaw.

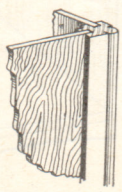
All parts must, of course, be properly cleaned with glasspaper before being finally fixed and glued, and a thorough test made all round to see the pieces fit correctly. Give a final rub up all round when the work is put together to take away all grease and dirt before applying the stain and polish.

Easy Ways of Making Corners

THE two corner mouldings illustrated simplify the making of corners or angles very much. Both are mouldings obtainable cheaply in any length.



The first has a rebate in which the wood will lie, to make a corner angle, for clock tops, etc., of about 130 degrees. The other is provided with two grooves into which the side panels slide and are glued. These grooves are provided for 3/16in., ¼in. or ⅜in. wood and the moulding is obtainable in mahogany with square corners or, as illustrated, in oak or hazel pine.



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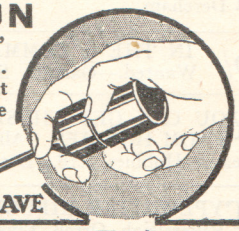

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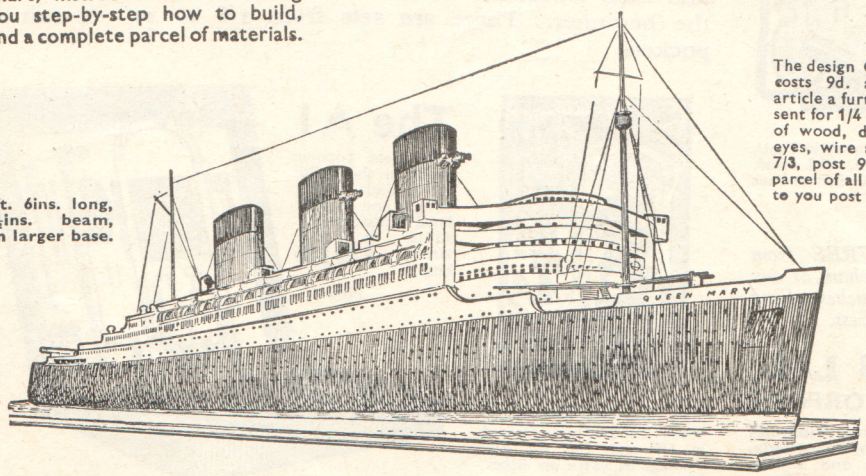

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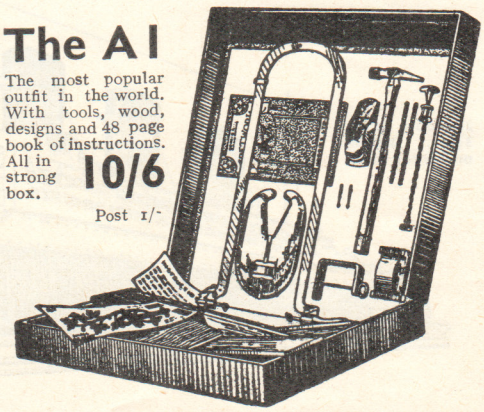

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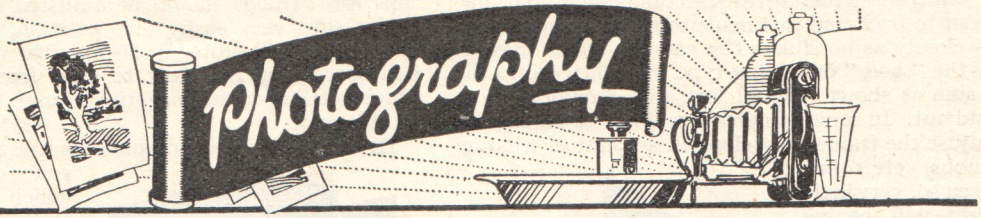


HOW TO MAKE AN ENLARGER

IN making an enlargement the negative is projected on to a screen just in the same way as a magic lantern slide. The image so obtained becomes a big negative, and by placing a piece of bromide paper on the screen and exposing, an enlarged positive is obtained.

The enlarger described here is very simple to make, but it has to a great extent to be built to fit your own camera, so examine the diagrams well and get the general idea before starting work, as precise measurements are in several cases impossible.

As will be seen the whole arrangement consists of (1) a box containing lamps, (2) a frame in which the camera slides and (3) a holder for the negatives. Box and frames are fitted on to a central baseboard.

The lamps brilliantly illuminate the card (a) which causes the negative at (b) to be projected through the camera lens on to the screen upon which is secured the piece of suitable printing paper. This method gives a very even illumination (an important point) and does away with the necessity of a "condenser" which is always an expensive item in official enlargers.

The box—(technical name the lamphouse)—is about 10ins. long by 6ins. high and 6ins. from back to front. The bottom is made up of three pieces, the centre one of which (g) is extended forward for about 8ins. to hold the camera and allow of it sliding outward for some distance. The frame (2) is also attached to this extension.

From the front of the box a rectangle (h) is cut not greater than 3ins. by 2ins., the centre of which must be level with the lens of the camera when standing in the frame. The size 3ins. by 2ins. is quite big enough for getting all that is necessary out of negatives up to quarter plate.

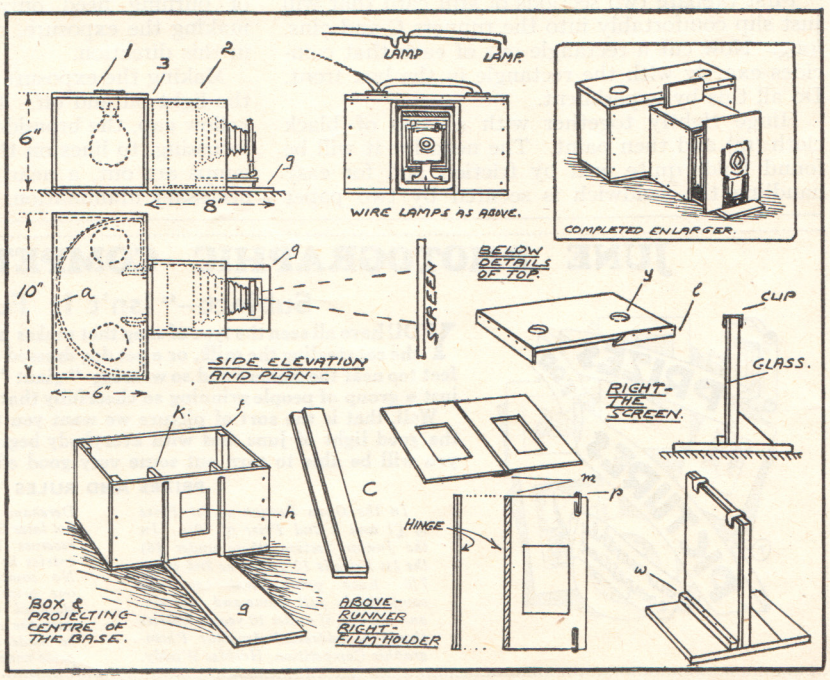
If V.P. size only is the biggest that will ever be used, make the rectangle smaller, as well as the box, etc.

Prepare two pieces as per C and fit either side of the opening 3ins. apart; these are to be the runners in which the film holder will slide.

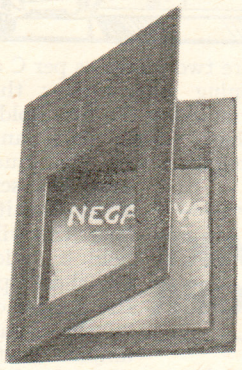
The base, sides, back and front are fitted rigidly together with ¾in. square corner pieces (f) using ¾in. screws. Now fit in a sheet of white card (a) 21ins. by 6ins. (this will cost 2d.). It will hold by friction. Fit also the two short uprights (k) to prevent the danger of direct rays falling on the negative, 1¼ins. deep is ample. Fasten more card with drawing pins round back of lamp and projector as shown.

The top of the box is held by four screws only at the corner pieces; if light leaks out it should be bordered by a length of card 1in. deep (l).

The lamps are fitted to two standard wall holders which pass through the two holes (y) cut to just take the holders which are pushed through from the top, the flanges lying outside. The holes are about 2½ins. from either end and the same from the sides. Adjustment must be made to get the mid-point of the lamps to coincide with the middle of the rectangle and the lens. The lamps, wired as shown, work from an ordinary plug-in adaptor.



The frame is merely three sections of material 5ins. front to back and just made to fix over the camera as closely as possible. The camera, which may be of the " box " or folding type when fitted into the frame as shown, should just slide comfortably in and out. In some cameras it will not be possible to adjust the frame very close on account of winding knobs, etc., but even so, very little light will escape forward, and any stray beams which do, are prevented reaching the screen and so fogging the paper, by the card (see sketch of finished enlarger) which slips over the front of the camera.



The film holder

The frame is held by screws to the projecting baseboard, and by carefully inserting screws through from the inside of the box front, if two pieces of ⅜in. material are used for the sides, there will be no danger of splitting.

The top of the frame does not quite reach the back, a suitable opening being left for the insertion of the film holder. Frame, box and base should be finished with a dead black paint. (" Drop black "—two pennyworth is ample). The inside of the box should not be painted, but inside the frame must be well blackened.

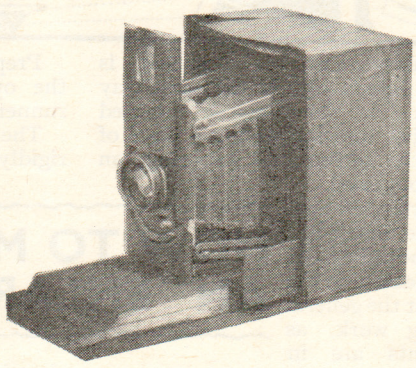
Holder for Film

This is merely a " sandwich " of card to hold the negatives, but make it with some care.

First prepare two sections of stiff card that will just slip comfortably into the runners C and 7ins. long. Now cut a rectangle out of each that coincides exactly with the rectangle in the box front. Do all this by experiment.

Hinge tightly together with a strip of black cloth (m) and then paint. The negative it will be found holds quite well by friction and for easy handling the sandwich is secured by two paper clips (p). Things should be adjusted so that the holder slips very easily into position, as pushing and jerking will probably displace the negative, as well as causing fine dust to wear from the card which, settling on the negative, causes white spots on the print.

Everything is now complete except the easel or screen, upon which to throw the picture and to hold the paper. In your early work this can be of a very simple nature. An upright board fitted to a base with a sheet of glass in front will suffice, the glass being held at the foot by the strip of wood (w) and at the top by two tin clips.



General idea of the frame

The printing paper, of course, lies on the board and is kept in position by the glass.

The enlarger is now in order. Readers who have used bromide paper and have seen a little of this sort of thing done, will find no trouble in using it, and for the benefit of those that are quite new to all this, our next article will give full details of how to make a bromide enlargement.

Points to Note

One or two points for any who will be using the enlarger right away. As no ventilation is fitted, the box can become unduly heated if the lamps are left burning too long, as, however, the actual time of burning need only be when focussing and making the exposure, care can easily be exercised in this direction.

Making the exposure is carried out by switching the light on and off. Thus there is no need for a yellow cap, the bromide paper being inserted after focussing, to lines on the board while the enlarger lamps are out, a nearby safe light giving all the necessary illumination.

JUNE PHOTOGRAPHIC COMPETITION

Subject—" Isn't It Funny ! "

YOU have all seen the type of snap that makes people smile. Maybe it is the cat stealing the milk, or a pet dog dressed up, or some-one with their feet too near the camera and so wearing " giant " boots. Or perhaps it is just a group of people grinning so cheerfully that you cannot help joining in.

Well, that is the sort of picture we want you to take this month. With the good light of June and with everybody beginning to feel " holidayish" you will be able to turn out some very good efforts we are sure.

PRIZES AND RULES

In the Open Section a 1st Prize of £1 and a 2nd Prize of 10/-. In the Junior Section (those under 16) the 1st Prize is 12/6 and the 2nd Prize 7/6. Each print must bear the competitor's full name and address, and his age, if under 16 years. Entries should be addressed Amateur Photographic Competition, Hobbies Weekly, Dereham, Norfolk, and must arrive not later than June 30th. The Editor reserves the right to publish any entries he wishes in Hobbies Weekly. No competitor to take more than one prize during the season. If a stamped addressed envelope is sent with the entries every endeavour will be made to return them, except the prize-winning ones.

ROCK GARDEN WITH A POOL AND FOUNTAIN

IN a small garden a formal pool is best, and an oval shape looks well. An irregular shape is more suited to a large wild garden ; in a small one it would quickly go out of shape as the plants at the edge began to straggle. In wild water gardens a ditch built of brick is sometimes made round the margin in which to grow rushes, but in a small garden this type of pool would come to look just like a dirty water hole that happened to come there.

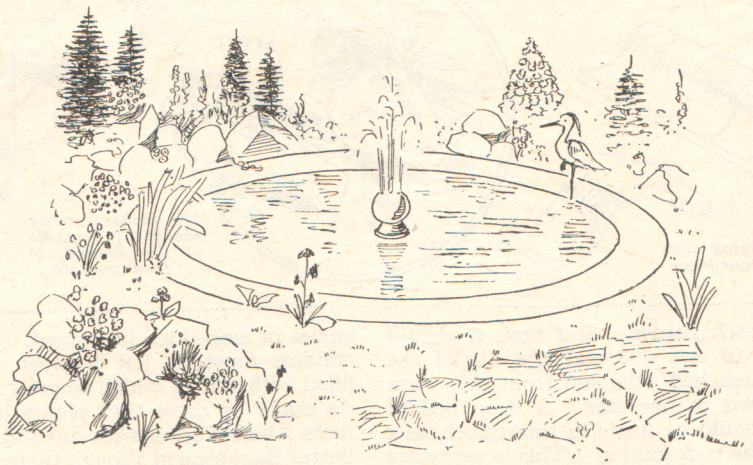
So a formal pool is best, with a rock garden made to look as natural as possible, a place where choice Alpines may grow in suitable soil and surroundings. This will make an interesting place for the gardener to work in and pleasant to behold for the onlooker.

Work it Out

A black and white plan of such a garden is a most discouraging thing to study. A visit to an established garden where there is a pool and rock work is a better stimulus or, failing that, make a study of a coloured sketch in a good garden book from a library.

The first plan shows an oval pool with a pavement surrounding it. This makes an ideal place for sitting and for growing pavement plants. The rock garden should slope gently backwards from the pavement to the surrounding wall, or a bit of grass may intervene between pavement and rock garden.

Grass always adds charm to a rock garden and the best examples always have a setting of grass. It does cause a little work to keep it shorn, but no good gardener grudges the work of keeping it in order. It adds so much to the beauty of the place.



An artistic layout (plan II) with ornamental bird on the side of the pond

A pool with a fountain in the centre need not be so deep as one required to grow water lilies and other aquatic plants. It need not be more than a foot and a half deep, but the excavation should be at least two feet to allow for a bottom of puddled clay and the lining of concrete, which should be about five or six inches thick. Hollow out the pool, making it an oval shaped basin with a rounded bottom.

Next lead a water pipe connected with the main and led to the pool at a depth which will ensure that it will be well under the surrounding turf when the work is completed.

The Fountain Jet

Lead this pipe to the centre of the pool and connect it with an upright pipe to which a fountain jet of brass should be screwed. These can be purchased at good horticultural stores and are not expensive. A plug should also be fitted at bottom of pool and this should be connected with waste drainage pipe. In a small pool this could, however, be dispensed with and the pool emptied for cleaning by bucket.

An overflow pipe is necessary fixed near the top of the pool. If there is any doubt about this work it might be worth while to get a plumber to do the fixing of the pipes or consult a handbook. A tap for turning on the water should be fitted just outside the outer edge of pool and can be concealed by rockwork.

As soon as the pipes have been fixed the bottom of the pool should be lined with puddled clay. This should be beaten into shape and then the entire surface of the pool lined with five or six inches of concrete.

Make the concrete by mixing one part of cement, two parts fine sand and five parts broken stones or gravel; the small surplus stones from those intended for the rock work will do. Mix all this material thoroughly and then add water till it is of a workable consistency.

For ponds and tanks a small percentage of boiled linseed oil is recommended. About ten per cent. is usual. Or when the pool has been satisfactorily lined with concrete give a coating of fairly thin cement to which has been added a preparation called Pudlo. This makes the pool watertight. This final coating of thin cement should be brushed on to give a good smooth

finish, as where there is a fountain the water is usually translucent and the bottom of pool visible.

The edging looks well if "Old Stone" Pond Edgings are bought ready made from a good firm of garden ornament designers. A simple edging can be made with wooden moulds at home. Or a local builder who works with concrete would make them to order, if supplied with a small drawing showing the required curves and sizes.

An informal edging can be made by embedding rocks in the concrete and planting alpines about the edge, but a formal edging is very attractive and less harmful to the gardener when kneeling to clean or work about the water's edge. This, however, is a matter for each individual to decide. for himself.

The soil thrown out from the pool will make a mound for the rock garden. But first, it should be thrown well to one side and the site of the garden deeply trenched ; the soil from this work also being thrown to one side. A deep bed of broken stones should be made in this trench as a foundation for the rock garden. This is necessary to ensure thorough drainage.

It is a good plan to outline the area to be covered with rock work with a garden line keeping the design as rugged and natural as possible. Even the flat area to be clothed with turf should be drained as water-logged turf is most objectionable.

Now make the mounds as you wish them to be. Mix some grit and rubble with the soil and embed a few stones as this is the kind of soil suited to rock plants. For the actual rock work, place the large stones at the bottom, and for the whole use as large stones as possible. Lime stone rock is ideal but sometimes difficult to get. Porous sandstone is good. Two thirds of each stone should be buried in the soil to ensure stability and cool root runs for the plants.

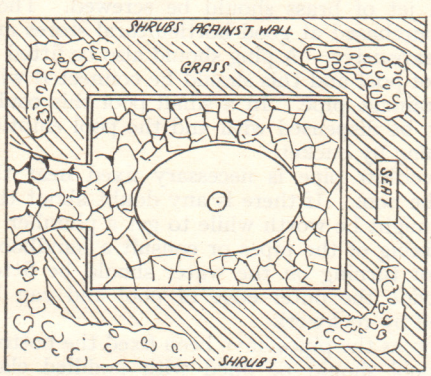
Arrange the stones so they form pockets for soil and set them at an angle which gives them a slight tilt inwards at the bottom. This is to ensure that water will trickle down the sides of the stones to the roots of the plants.

When the rock garden is complete lay the turf about the pool and allow the whole some time to settle. Plants can be put in at any time if bought in pots and transplanted with the ball of roots and soil entire.

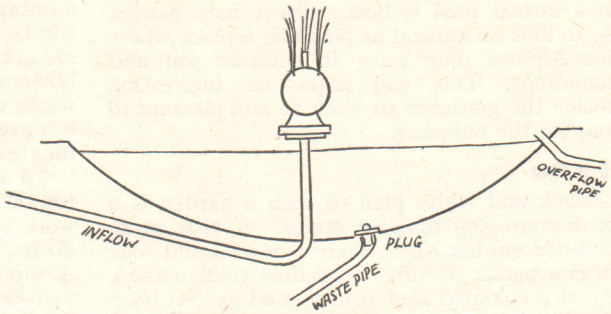
Crazy pavement should be evenly laid either in a firm bed of ashes with a foundation of broken stones or embedded in cement. If cement is used crevices must be left between the stones to be filled with soil in which to grow pavement plants. As many of these tiny plants have long trailing roots a bed of ashes with fine soil on top is perhaps better than cement though there is a danger of the stones becoming uneven and needing occasional attention to keep them in place.

Good pavement plants are Thymus serphllum, Arenaria balearica and dwarf Mentha Requienii, a tiny mint.

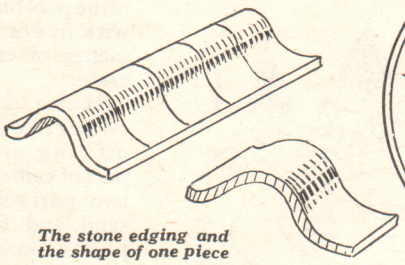
Dwarf shrubs should be planted as a background to this kind of garden as they give feature and screen surrounding walls. Small conifers such as Cupressus, Junipers, Arbor Vitae and the deciduous, Acer Palmatum purpureum, gives welcome reddish tinted foliage among so much green.



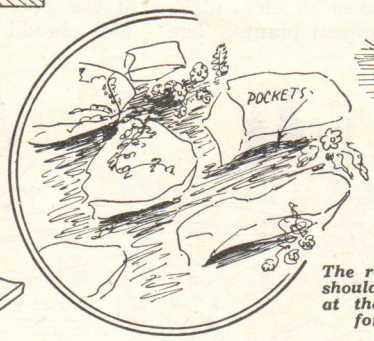
The layout of a suitable pool (plan 1)

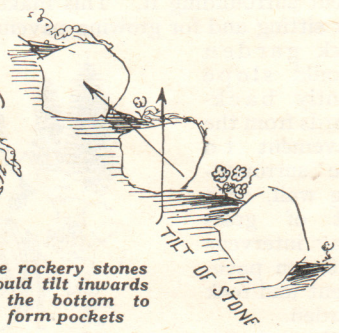


A section of the pool showing pipe system



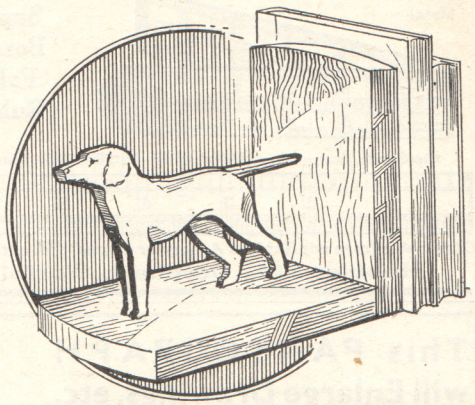
The stone edging and the shape of one piece





The rockery stones should tilt inwards at the bottom to form pockets

ANIMAL BOOKENDS IN FRETWOOD



FRETWORKERS looking for novelties, will welcome the suggestions given here for realistic cut-outs. Instead of just the plain single statuette we are accustomed to see in the form of animals, etc. we can obtain a first-class effect by the duplicate cutting of fairly thick wood and the paring away and carving of certain parts.

The idea can best be explained by the illustrations given here. In Fig. 1, at A, B and C we have the outlines of three dogs A, The Pointer, B, The Dachshund, and C, The Retriever. The first thing to do will be to enlarge one of these on to paper by means of the ½in. squares shown. Having drawn out the squares lightly in pencil add the heavier outline and the small dotted lines.

The Wood

The next thing to prepare will be the wood, and a good thickness is ¼in. Two pieces of this thickness are pinned together, the size of the pieces being about 6ins. by 4ins. for the dog lettered A.

In sawing, keep strictly to the outline ignoring the dotted lines for the time being. Two distinct ¼in. cut-outs will be the result. Each cut-out must now be treated separately and Fig. 2 should make it clear what is to be done.

Taking piece A as the near side, cut away with the fretsaw that leg which is shown forward, this leg being kept on in the case of piece B.

Now, again, in piece B cut away the leg which is thrown back, thus making the legs appear perfectly natural one behind the other.

The dotted lines in outlines of the dogs show clearly where and how the additional cutting is to be done. When both fore and back legs and feet have been treated as suggested, the two pieces are glued together.

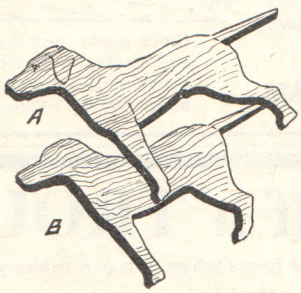


Fig. 2—The separate parts

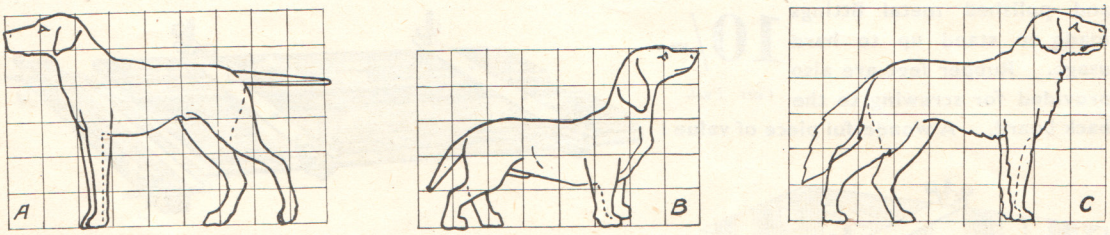
The result, is a perfect " four-legged " dog and when lightly carved in places, a really remarkable and lifelike figure remains. The eyes and ears may be cut in, in V fashion to give sufficient outline and the legs if desired, too, may be rounded.

Toys or Ornaments

These animal cut-outs may answer solely as toys for say a Noah's Ark or they may serve as attractive ornaments for ash trays, pen racks or for the ever-popular book-end as given in our illustration above. Satin Walnut will be found very suitable for the work, as too hard a wood makes cutting a little tiring.

There are one or two finishes for the wood which might be tried. A light stain brushed on would look quite good, so also would a coating of matt paint.

Before any finish is put on, however, the edges will need glasspapering to hide any signs of the joins. All the cutting should be done with a fine grade fretsaw.

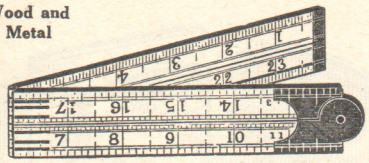


[Fig. 1—Outlines for three dogs which can be enlarged from these patterns

How to make a splendid model sailing yacht will be described in next week's issue

RULES FOR CRAFTSMEN

Wood and Metal



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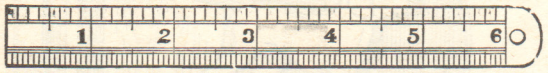

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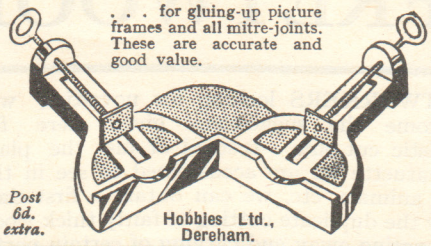

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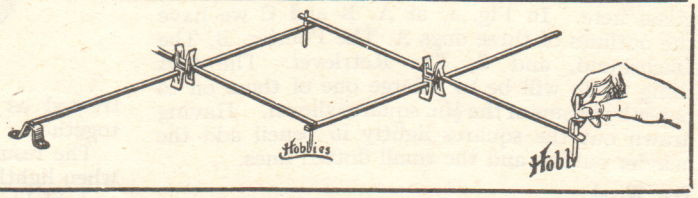

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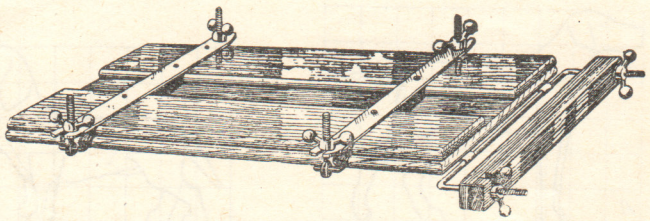

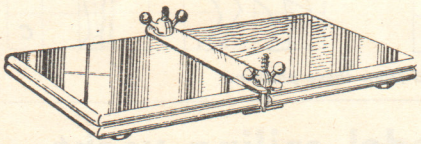

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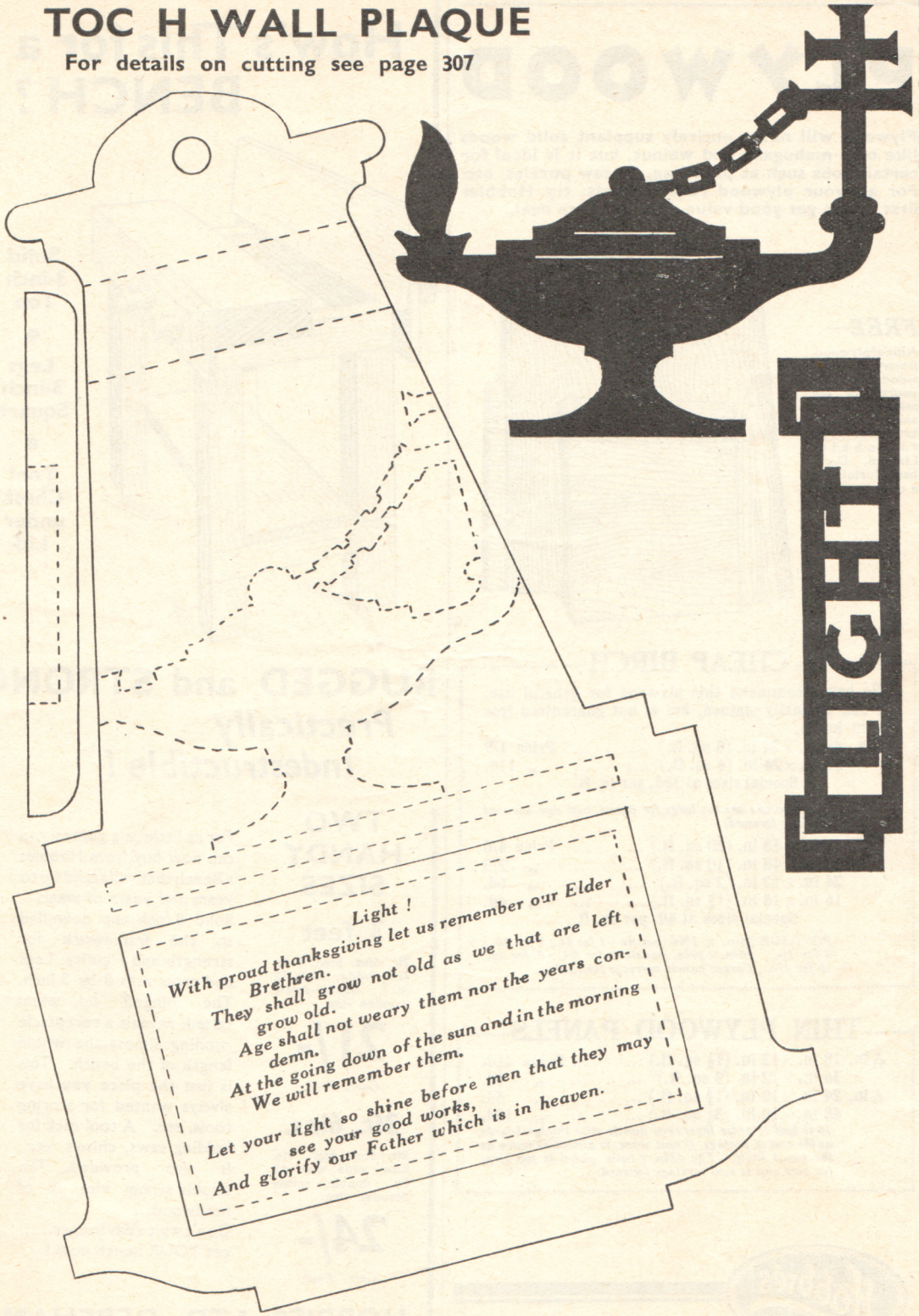
For details on cutting see page 307


LIGHT
Light !
With proud thanksgiving let us remember our Elder Brethren.
They shall grow not old as we that are left grow old.
Age shall not weary them nor the years condemn.
At the going down of the sun and in the morning
We will remember them.
Let your light so shine before men that they may see your good works,
And glorify our Father which is in heaven.

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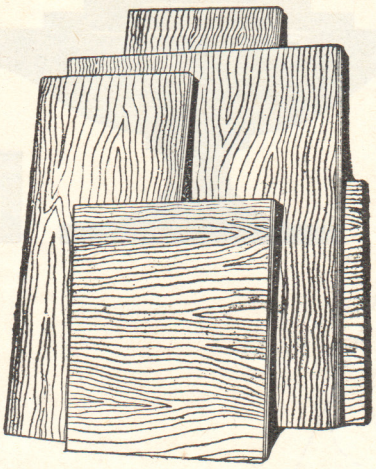
Plywood will never entirely supplant solid woods like oak, mahogany and walnut, but it is ideal for certain jobs such as panelling, jig-saw puzzles, etc. For all your plywood requirements, try Hobbies first. You get good value—and a square deal.



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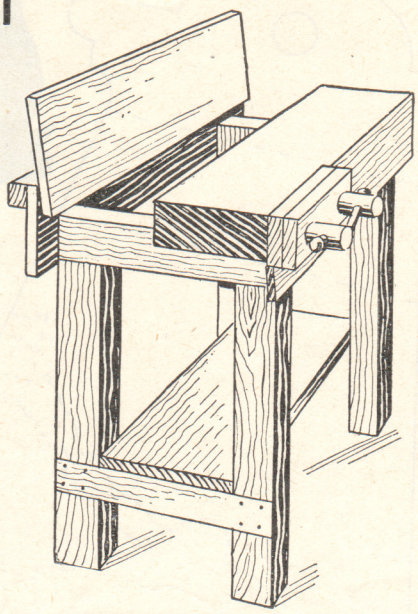

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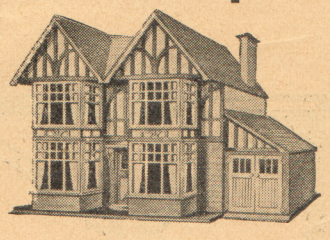

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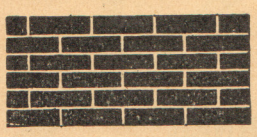

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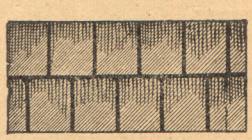

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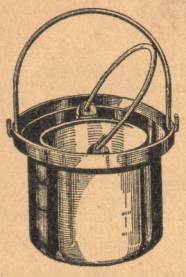

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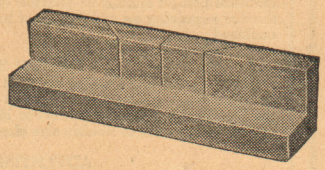

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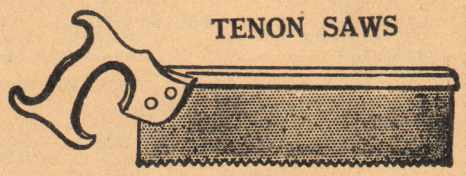

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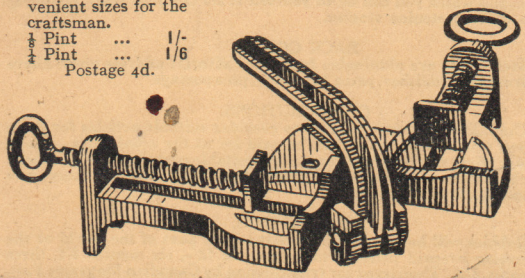

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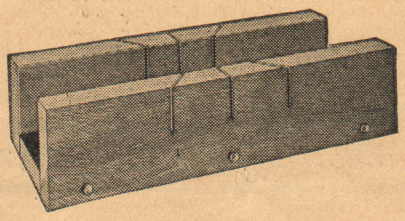

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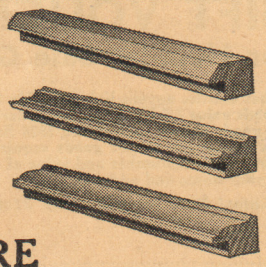
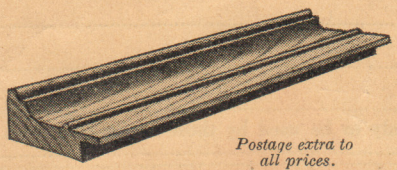
The moulding is laid in the trough between the sides. This tool can be thoroughly recommended. In selected hardwood. Price **2/3,** post 9d.

A few of the special picture frame mouldings supplied by Hobbies. These are in Oak, ½-in. wide and cost only **1½d.** per ft.

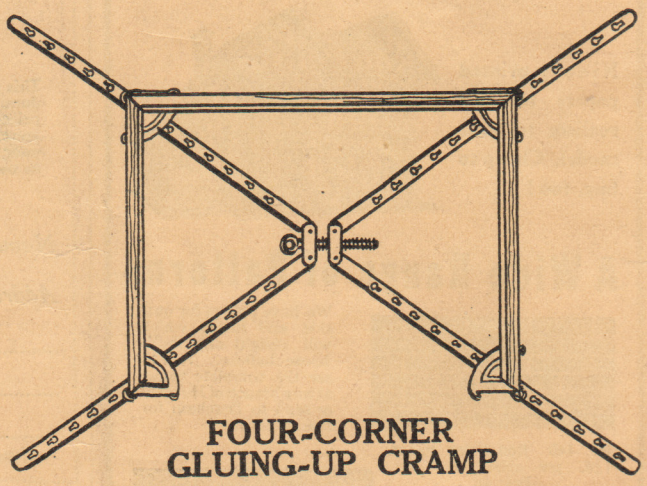


PICTURE FRAME MOULDING



Postage extra to all prices.

An attractive Oak Moulding in three sizes. 1in. wide **2d.** per ft. 1½ins. **3d.** 2ins. **3½d.** per ft.



FOUR-CORNER GLUING-UP CRAMP

With a tool like this you can glue up all four corners at once. The pressure is applied by one central screw, so that it is equally distributed to each corner, In two sizes. No. 1 for frames up to 33 by 26ins. Price **13/6.** No. 2 for frames up to 52 by 33ins. Price **17/6.** Postage 1/- on either.

You can buy all your requirements for Picture Framing from Hobbies Branches and Agents, or direct from Hobbies Limited, Dereham, Norfolk.

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